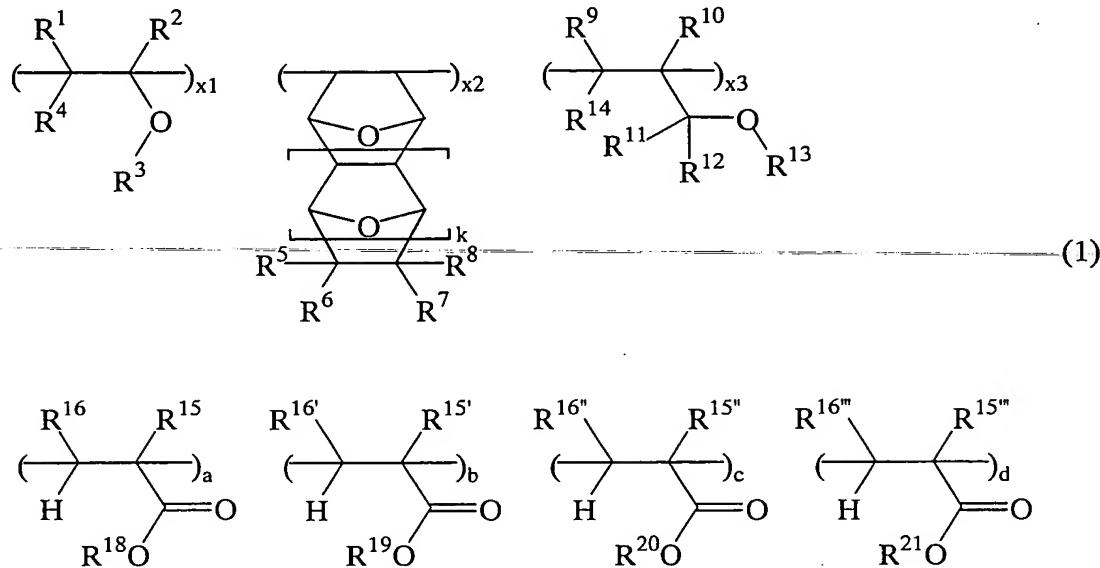


CLAIMS:

1. A polymer comprising recurring units of the following general formula (1) and having a weight average molecular weight of 1,000 to 500,000,
 5



wherein R¹ and R² each are hydrogen or methyl,

R³ and R⁴ each are hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, and R³ and R⁴ may bond together to form a ring, wherein R³ and R⁴ together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

each of R⁵ to R⁸ is hydrogen, a hydroxyl group or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom, at least one of R⁵ to R⁸ contains a hetero atom, any two of R⁵ to R⁸ may bond together to form a ring, wherein the ring-forming two R's together represent a straight, branched or cyclic, divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R⁹ and R¹⁰ each are hydrogen or methyl,

each of R¹¹ to R¹⁴ is hydrogen or a straight, branched or cyclic, monovalent hydrocarbon group of 1 to 15 carbon

atoms which may contain a hetero atom, a pair of R¹¹ and R¹², a pair of R¹¹ or R¹² and R¹³, a pair of R¹¹ or R¹² and R¹⁴, or a pair of R¹³ and R¹⁴ may bond together to form a ring, wherein each pair represents a straight, branched or cyclic,

5 divalent hydrocarbon group of 1 to 15 carbon atoms which may contain a hetero atom,

R¹⁵ is hydrogen, methyl or CH₂CO₂R¹⁷,

R^{15'} is hydrogen, methyl or CH₂CO₂R^{17'},

R^{15"} is hydrogen, methyl or CH₂CO₂R^{17"},

10 R^{15'''} is hydrogen, methyl or CH₂CO₂R^{17'''},

R¹⁶ is hydrogen, methyl or CO₂R¹⁷,

R^{16'} is hydrogen, methyl or CO₂R^{17'},

R^{16"} is hydrogen, methyl or CO₂R^{17"},

R^{16'''} is hydrogen, methyl or CO₂R^{17'''},

15 R¹⁷, R^{17'}, R^{17"} and R^{17'''} may be identical or different between R¹⁵ and R¹⁶, between R^{15'} and R^{16'}, between R^{15"} and R^{16"}, and between R^{15'''} and R^{16'''}, respectively, and each is a straight, branched or cyclic alkyl group of 1 to 15 carbon atoms,

20 R¹⁸ is hydrogen or a monovalent hydrocarbon group of 1 to 15 carbon atoms containing a carboxyl or hydroxyl group,

R¹⁹ is a monovalent hydrocarbon group of 2 to 15 carbon atoms containing at least one partial structure selected from the group consisting of ether, aldehyde, ketone, ester, 25 carbonate, acid anhydride, amide and imide,

R²⁰ is a polycyclic hydrocarbon group of 7 to 15 carbon atoms or an alkyl group containing a polycyclic hydrocarbon group,

R²¹ is an acid labile group,

30 k is 0 or 1,

x₁, x₂, x₃, a, b, c and d represent a molar compositional ratio of the recurring units associated therewith, satisfying x₁+x₂+x₃+a+b+c+d = 1, x₁, x₂, x₃, a, b and c are numbers inclusive of 0, d is a number of more than 35 0, all of x₁, x₂ and x₃ are not equal to 0 at the same time.

2. The polymer of claim 1 wherein the acid labile group represented by R^{21} in formula (1) is a tertiary alkyl group having a cyclic structure.

5 3. A resist composition comprising the polymer of claim 1.

4. A process for forming a resist pattern comprising the steps of:

10 applying the resist composition of claim 3 onto a substrate to form a coating,

heat treating the coating and then exposing it to high-energy radiation or electron beam through a photo mask, and

optionally heat treating the exposed coating and
15 developing it with a developer.